Performance Based Logistics

Presented to the

DAU LOG 304

19 April 2007

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Logistics and Industrial Operations

Naval Air Systems Command

Outline

- Recent PBL Policy
- DoN PBL Status, Model
- PBL Characteristics
- What We Have Learned
- Commercial PBL Application
- New Policy Details
- Current Issues/Concerns
- PBL Examples

Performance Based Logistics (PBL) Policy

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- ***PBL is STILL the DoD's and DoN's Preferred Product Support Strategy***
- DoD Directive 5000.1, "The Defense Acquisition System," 12 May 2003
  - ✓ PMs Shall Develop and Implement PBL Strategies That Optimize Total System Availability While Minimizing Cost and Logistics Footprint
- SECNAVINST 5000.2C, 19 Nov 2004, "PBL Is The Preferred Support Strategy And Method Of Providing Weapon System Logistics Support"
- **NAVAIR 00 Memo, PBL Guidance and Best Practices, 13 Feb 2007**
  - ✓ Sets Forth PBL Best Practices That Have Been Used And Proven And Should Be Employed As Much As Practical For Weapon Systems Under The NAVAIR PMA Direction And Control (Including Joint Programs)
- **DUSD L&MR Memo 10 Mar 2007, Life Cycle Sustainment Outcome Metrics**

DUSD L&MR PBL Policy

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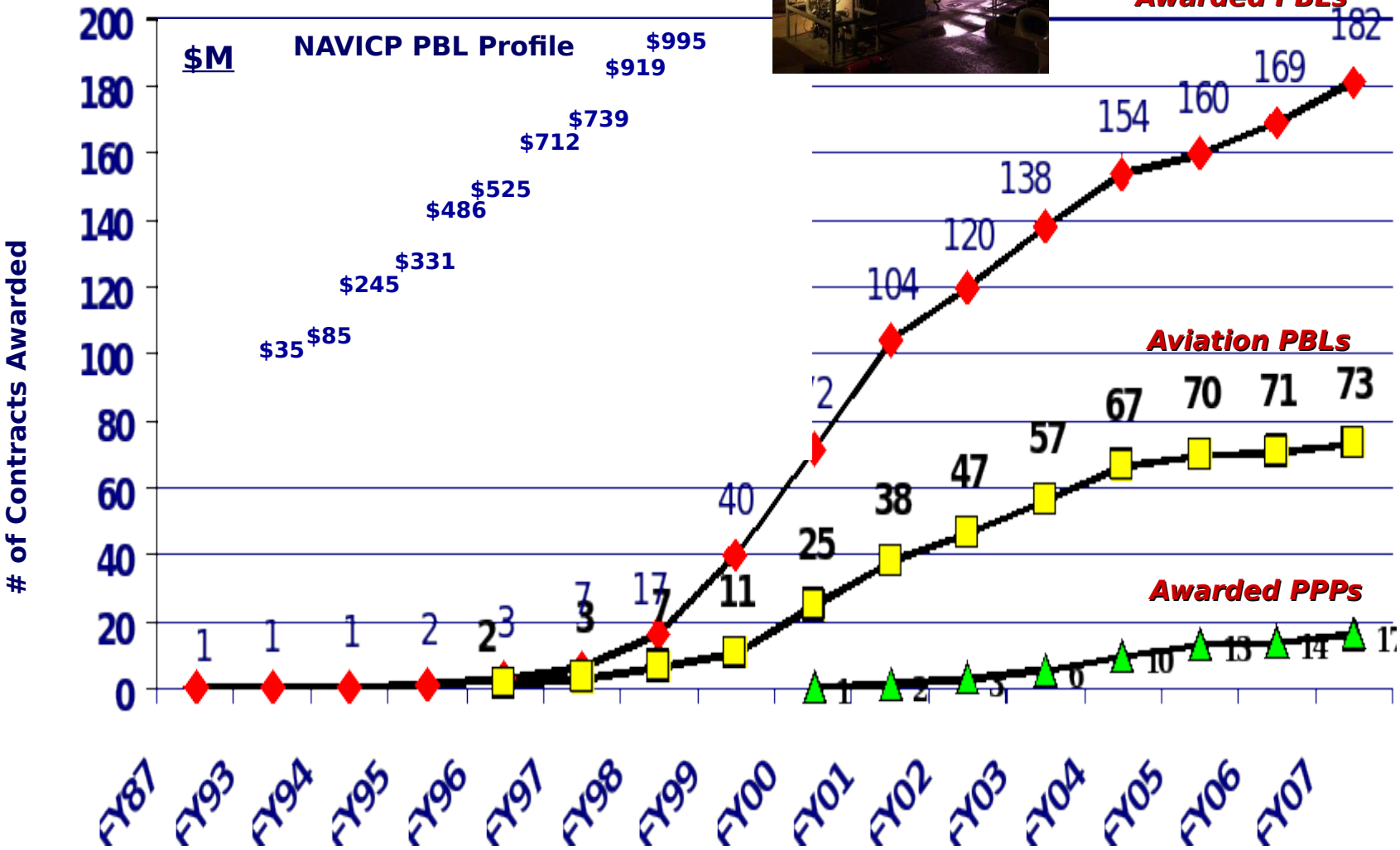
- DUSD L&MR Responsible for PBL Policy
- Goal is to Link PBL and CPI to Achieve **"Performance Driven Outcomes (PDO)"**, and Integrate Life Cycle Management (LCM) Principles Into Acquisition and Sustainment Processes/Decisions
- Per USD AT&L Memo 21 Nov 2006, Integrating LCM Into Acquisition, Task Force Formed To:
  - ✓ Review Existing Acquisition Process And Recommend Enabling Changes To Fully Integrate LCM Outcomes (Materiel Readiness/Availability, Materiel Reliability, Mean Down Time, Ownership Cost)
  - ✓ Identify Additional Changes Needed To Extend The Focus On LCM Outcomes Into Sustainment
- Currently Conducting An Independent Assessment Of PDO In Industry And The Services, Including F/A-18 and T-45 Sustainment Strategies

USN PBL Status Overall

NAVAIR Aviation PBLs

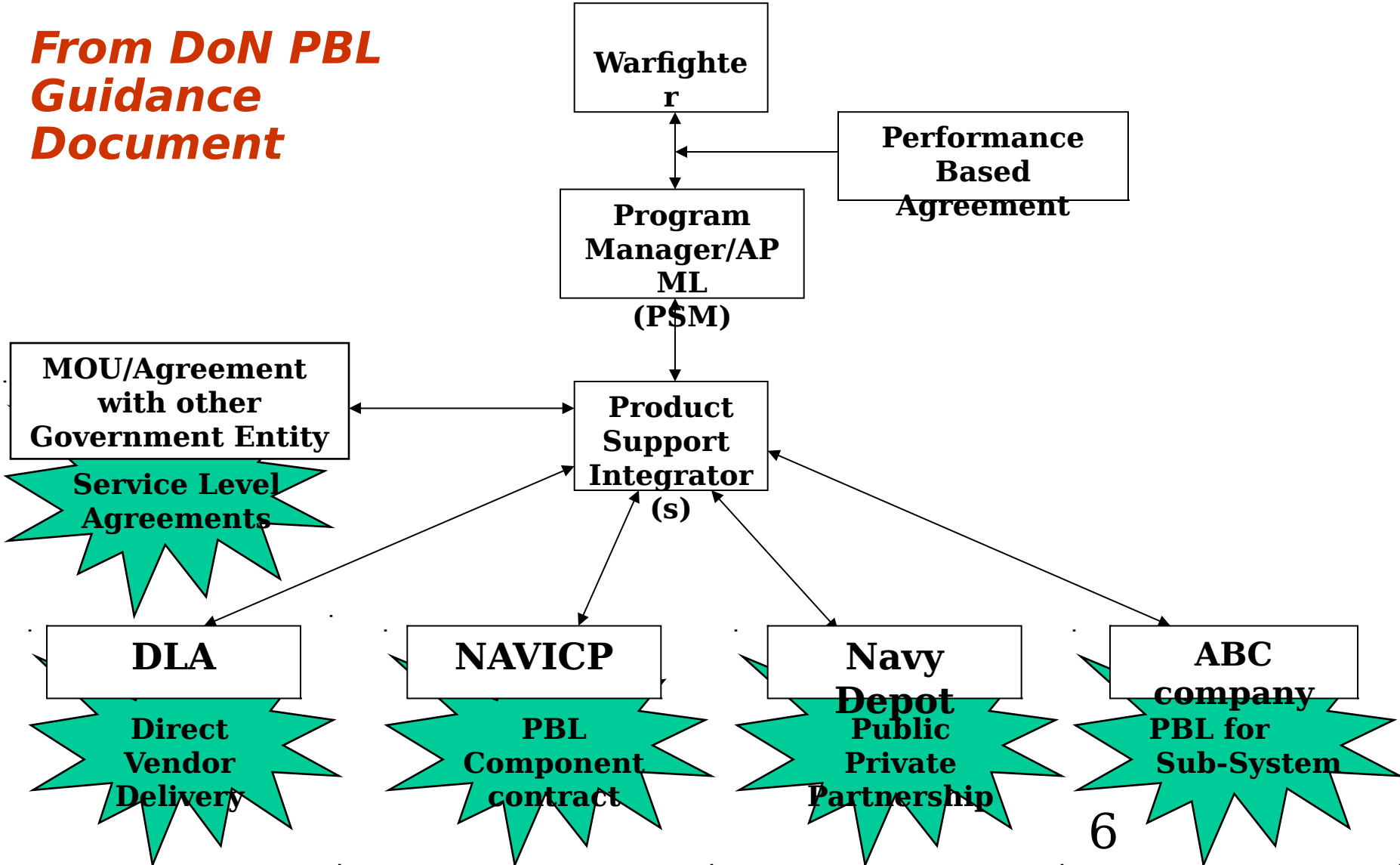
- ✓ Three Power by the Hour (V-22, T-45, KC-130J)
- ✓ T-45 Airframe & GBTS
- ✓ F-16 F100



A Reengineering Tool to Improve Readiness/Sustainment

DoN PBL Product Support Model for Weapons Systems

From DoN PBL Guidance Document



PBL Characteristics

- Each PBL Unique, Tailored to the Program or Situation
- Win/Win for USN/Contractor- Other Services, FMS May Benefit
- Aligns Industry Profit Incentive with Fleet Support Requirements
- Availability and Reliability Commitments/Guarantees
- Long Term Contracts Lower Risk and Encourage Investment
- Most Contracted by Naval Inventory Control Point-Philadelphia (NAVICP) **Using Navy Working Capital Fund (NWCF)**
  - ✓ Some NAVAIR Contracted Using O&M
- Fixed Price Contracts **With Inherent Incentive** to Improve Reliability…. Results in More Profit (Fewer Repairs)
- Business Case Analysis Must Show Savings/Cost Avoidances or Break Even with Benefits
- FFP PBL Provides Cost Predictability (e.g. Power by the Hour™)
  - ✓"We Need To Recognize That Predictability Of Cost And

C.

73 Awarded Aviation PBLs With Significant Successes

Notional PBL Vs. Traditional Engine Repair

PBL

- Parts Cost: $300,000
- Labor & Admin Costs: $34,000
- Total Cost: $334,000
- Average Life: 2,000 hours
- ***Cost per hour: $167***

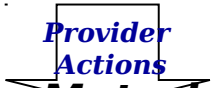
Traditional Repair

- Parts Cost: $120,000
- Labor & Admin Costs: $34,000
- Total Cost: $154,000
- Average Life: 375 hours
- ***Cost per hour: $411***

PBL- What We Have Learned

Why They Work:

- ***We Buy a Comprehensive Performance Package… Not Individual Parts, Repairs, ECPs, etc.***
- ***This Approach Changes the Provider Incentive Paradigm***
  - ***Fixed Price "Pay for Performance" Contract Now Motivates Provider to Reduce Failures / Consumption***
  - ***Long Term (5-15 years) Commitment Enables Provider to Balance Risk Vs. Investment***



- ***Improves Parts Support … Material Availability Increases + Logistics Response Time (LRT) Decreases Resulting in Improved Readiness***
- ***Optimizes Depot Efficiency … Build Specs, Repair Turn Around Time (RTAT), Awaiting Parts (AWP), & Work in Process (WIP) Decrease***
- ***Invests in Reliability … Mean Time Between Failures (MTBF) Improves***
- ***Proactive in DMSMS Management … Must Resolve DMSMS and Obsolescence Issues to Achieve Outcome Based Performance Metrics***

PBL- What We Have Learned

Government Relationships Are Closer With Industry

- Contractors Understand Benefits of PBL Relationships
  - ✓ Alignment of Shared PBL Objective Requires Trust and Development of Mutually Beneficial Arrangement… “Partner Vice Adversary” Relationship
  - ✓ Industry Has Better Understanding of PBL Process… OSD, NAVICP, NAVAIR and AIA, etc, PBL Training, Meetings and Working Groups
  - ✓ Positive Relationship Affects All Business…Traditional USN and FMS Support Improves As Well

Commercial PBL Programs

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- Like the DoD, Today's Successful Low Cost Carriers (LCCs) Airlines are Utilizing PBL Contracts as a Critical Component of Their Product Support Strategy
  - ✓ Extremely Competitive Industry with High Pressure to Drive Down Costs While Maintaining High Dispatch Rates
  - ✓ Best In Class- Southwest Airlines
    - After First Year, Never Lost Money
    - Profitable Through 9/11 Downturn and Recent Surge in Fuel Prices
- Airlines Are Looking for Predictability As Well As Cost Control
- Engine Maintenance Cost Per Hour (MCPH) or "Power by the Hour™" Contracts at a Flat Rate Per Flying Hour Help Airlines Forecast Expenses and Manage Costs
- Like Naval Aviation Policy, Which Supports ***All*** Types of PBLs, the LCCs Do Not Employ a Single Product Support

Public-Private Partnerships

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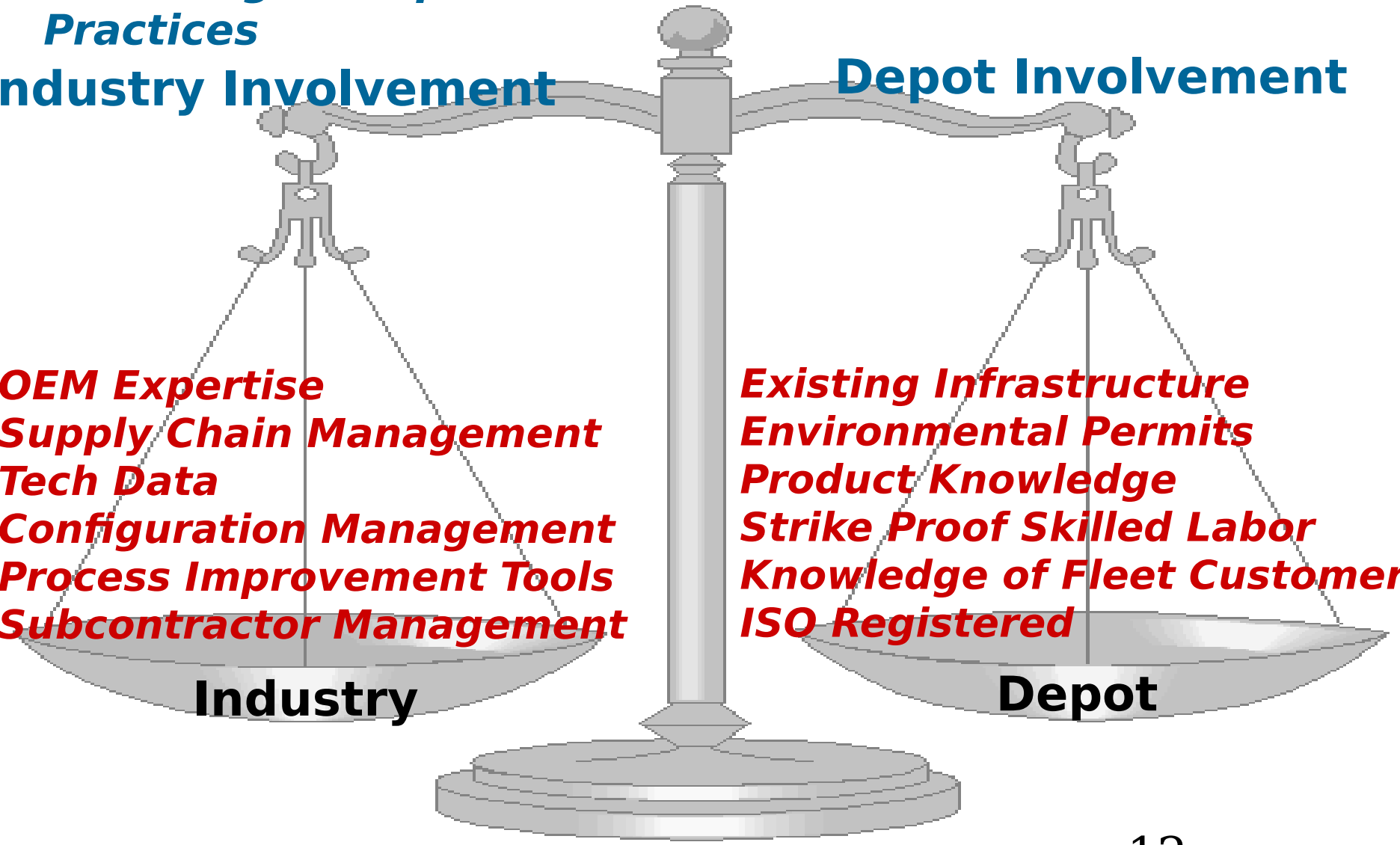
Achieving the Optimum Mix and Balance of Best Business Practices



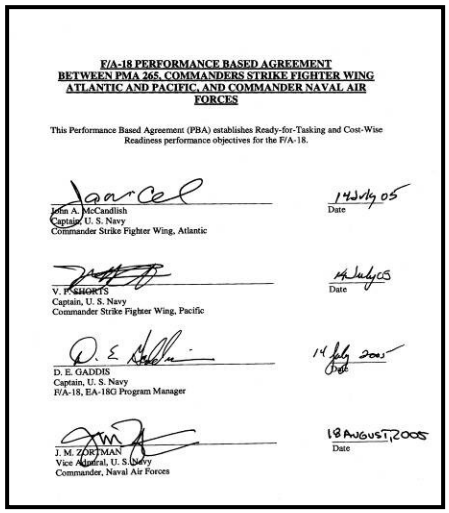
NAVAIR- 00 PBL Memo

In Order To Ensure That Program Managers Use Best Practices, Guidance in the Following Areas Is Provided For Establishing Weapon System PBLs:

a. Sustainment Funding
b. Contract Type
c. Justification and Approval (J&A)
d. Performance Based Agreement (PBA)
e. Virtual Program Office (VPO)
f. Integrated PBL Strategy
g. Business Case Analysis (BCA)
h. Cost and Software Data Reports (CSDRs)/Cost and Maintenance Data Reporting
i. DLA
j. Transparent to the Warfighter

This Document Will Continue To Be Updated And Revised As New PBL Best Practices Are Developed.

F/A-18 Sustainment Strategy- Basis For PBL Memo



F/A-18 PERFORMANCE BASED AGREEMENT
BETWEEN PMA 265, COMMANDERS STRIKE FIGHTER WING ATLANTIC AND PACIFIC, AND COMMANDER NAVAL AIR FORCES

This Performance Based Agreement (PBA) establishes Ready-for-Tasking and Cost-Wise Readiness performance objectives for the F/A-18.

John A. McCandlish
Captain, U. S. Navy
Commander Strike Fighter Wing, Atlantic
Date 14 July 05

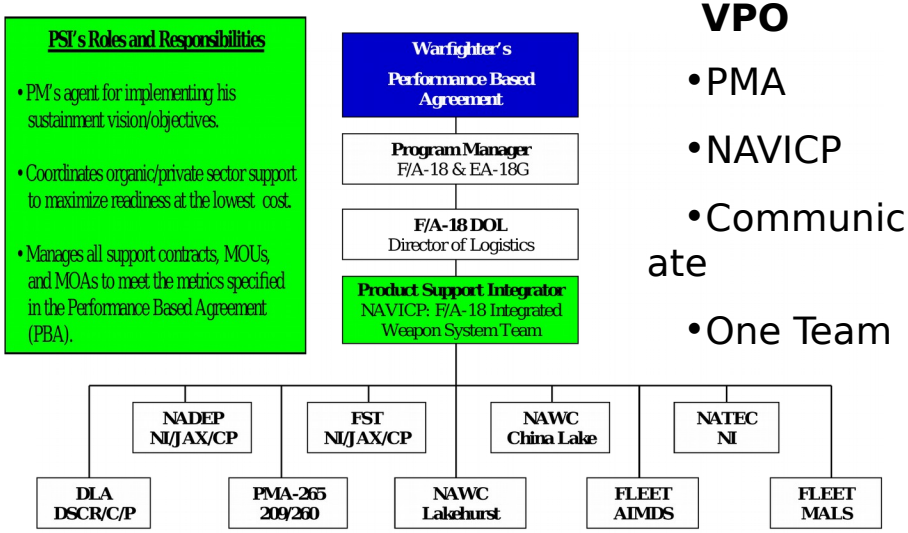
V. P. SHORTS
Captain, U. S. Navy
Commander Strike Fighter Wing, Pacific
Date 14 July 05

D. E. GADDIS
Captain, U. S. Navy
F/A-18, EA-18G Program Manager
Date 14 July 2005

J. M. ZORTMAN
Vice Admiral, U. S. Navy
Commander, Naval Air Forces
Date 18 AUGUST 2005

PBA

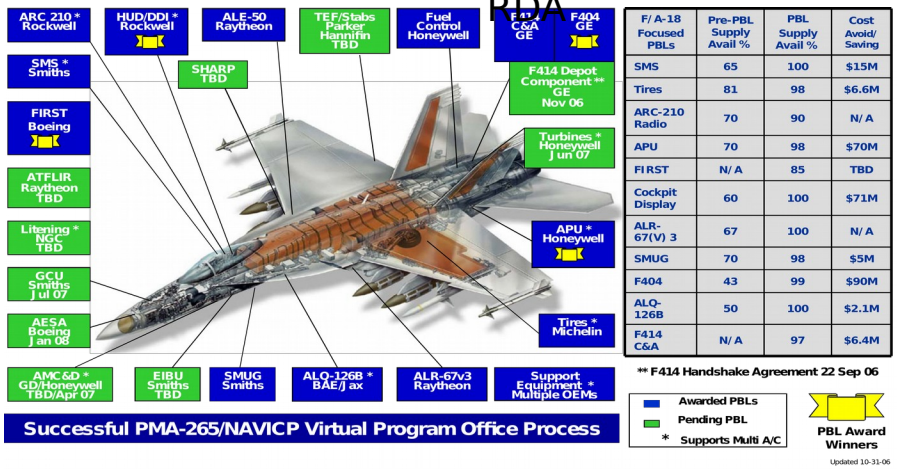
- Signed by CNAF
- Signed by Commodores
- Signed by PM
- RFT is single metric
- Drives PBL Discussion
- Resource Sponsors
- Required by ASN-RDA


PSI's Roles and Responsibilities
• PM's agent for implementing his sustainment vision/objectives.
• Coordinates organic/private sector support to maximize readiness at the lowest cost.
• Manages all support contracts, MOUs, and MOAs to meet the metrics specified in the Performance Based Agreement (PBA).
Warfighter's Performance Based Agreement
Program Manager F/A-18 & EA-18G
F/A-18 DOL Director of Logistics
Product Support Integrator NAVICP: F/A-18 Integrated Weapon System Team
NADEP NI/JAX/CP
FST NI/JAX/CP
NAWC China Lake
NATEC NI
DLA DSCR/C/P
PMA-265 209/260
NAWC Lakehurst
FLEET AIMDS
FLEET MALS

VPO

- PMA
- NAVICP
- Communicate
- One Team

Integrating Multiple OEM Centric PBLs



F/A-18 Focused PBLs	Pre-PBL Supply Avail %	PBL Supply Avail %	Cost Avoid/ Saving
SMS	65	100	$15M
Tires	81	98	$6.6M
ARC-210 Radio	70	90	N/A
APU	70	98	$70M
FIRST	N/A	85	TBD
Cockpit Display	60	100	$71M
ALR-67(V) 3	67	100	N/A
SMUG	70	98	$5M
F404	43	99	$90M
ALQ-126B	50	100	$2.1M
F414 C&A	N/A	97	$6.4M

** F414 Handshake Agreement 22 Sep 06

Awarded PBLs
Pending PBL
* Supports Multi A/C

PBL Award Winners

Updated 10-31-06

FIRST J&A covers All Sustainment Activity & TM

- Single 5 year FFP Contract with a 5 year option
- Utilizes 20 plus Fleet Driven Performance Metrics
- J & A $2.9B; Contract < $1B; Built-in growth
- Addition of CLINS, tasks, and efforts continuous.

- 0001 PBL
- 0001AA NWCF
- 0001AC APN
- 0002 Pre MSD
- 0003 DLA
- 0004 SE
- 0006 AESA
- 0017 Oceana
- 1xxx ECPs

DUSD AT&L Metrics Evolution

TLCSM Metrics (Aug 04)	Life Cycle Sustainment Outcome Metrics (Mar 07)
• ***Operational Availability (A_o)***	• **Materiel Availability** • *Key Performance Parameter (KPP) (per Aug 06 JROC Memo)*
• ***Mission Reliability***	• **Materiel Reliability** • *New Key System Attribute (KSA) (per Aug 06 JROC Memo)*
• ***Total Life Cycle System Cost per Unit of Usage*** • ***Cost Per Unit of Usage***	• **Ownership Cost** • *New Key System Attribute (KSA) (per Aug 06 JROC Memo)*
• ***Logistics Footprint***	• *No Corresponding New Metric*
• ***Logistics Response Time (LRT)***	• **Mean Down Time (MDT)**

Which Availability Metric?

- Operational Availability is Percent Of Time That A Weapon System Is Available For A Mission Or Ability To Sustain Operations Tempo:

Ao = System Up Time / Total Time (Up Time + Down Time)

- Materiel Availability Measures the Percentage of the Entire Population That is Operational (e.g. T-45 F405 PbtH)
- JSF Aircraft Availability (AA) Rate Utilized To Ensure The Fleet Is Capable Of Meeting Its Mission Requirements. AA Is Based Upon The Air Vehicle Being Mission Capable (For At Least One Tasked Mission) And Available For Use (i.e. In A Possessed Status).
- Supply Material Availability (“Off the Shelf”)
- Customer Wait Time
- Logistics Response Time (LRT)
- SRT (Supply Response Time) Is The Portion of LRT That The

Current Issues

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- System Level Type PBLs vs. Sub-System PBL Directly with OEMs (i.e. APUs, Engines, Radars, etc)
- Aircraft “Tip to Tail” Type and Engine PBLs May Require Funding From Multiple Appropriations, Each With Constraints, to Fund Single Line of Accounting “No Color of Money”, Multi-Year PBL
  - ✓ No Appropriation Specifically for Funding PBL
  - ✓ Multiple Year Contracts Using One Year Appropriations (e.g. 1A/5A Depot Repair O&M)
- Joint PBL Efforts, Air Force TSSR Approach with Contractor ICP vs. Navy NWCF Funded PBLs (e.g. V-22, JHMCS), FMS Participation
  - ✓ Supply Vs. Services Contracts
- Lack of PBL Understanding by Contracting, Budgeting and Legal Communities
- PBL BCA Policy and Guidance
- Developing Life Cycle PBL Strategy, Key Activities in Each Phase
- FAR Part 12 (Commercial) Contracts, Cost Reporting

rrent Issue- System vs. Sub-System Level PBLs

- If A Total Coverage System Level PBL Is To Be Pursued, Considerations Include Analysis Of Prime Contractor Management "Pass Through" Fees, Flow Down of PBL Contracts To Subs, And Overall Value Provided By The Prime

- **Bottom Line is that Alternatives to Total/Complete System Level PBL Should Be Considered and the Product Support Decision(s) Must Be The Most Cost Effective Approach**

NAVAIR PBL Financial Strategy

- After 10 Years of Effort on Single Line of Accounting (SLA) With Numerous Failed NAVAIR SLA Legislative Proposals, Current Plans Include:
  - ✓ SLA Effort Shifted to OSD and Industry (AIA), ADUSD MR&MP is ***(Was?)*** SLA Champion
  - ✓ Continue to Work With DASN(A&LM), OSD, DAU, Other Services, and Industry
  - ✓ OSD Ruling on Use of Non-Severable Deliverable Clause For PBL
- ADUSD MR&MP (LMI) Studying Successful PBL Programs to Identify Barriers to Implementation and Areas for Improvement to Accomplish Vision for “Performance Driven Outcomes”
  - ✓ Reviewed F/A-18 “Sustainment Strategy”
  - ✓ T-45 “Power by the Hour” Next USN Program for Evaluation

JSF Global Sustainment Strategy/PBL Approach

F-35 ALGS Enterprise Strategy

JSFPO – Team JSF/Propulsion

- **"Steady State" PBL Contract**
  - Long-Term Incentivized
  - Fixed-Price, Based On $/FH
  - Accounts For Operational Tempo Variation
  - Resource Prioritization Approach
  - Annual PBA Updates
  - Ease Of Administration
  - Off Ramp

JSF Program Office

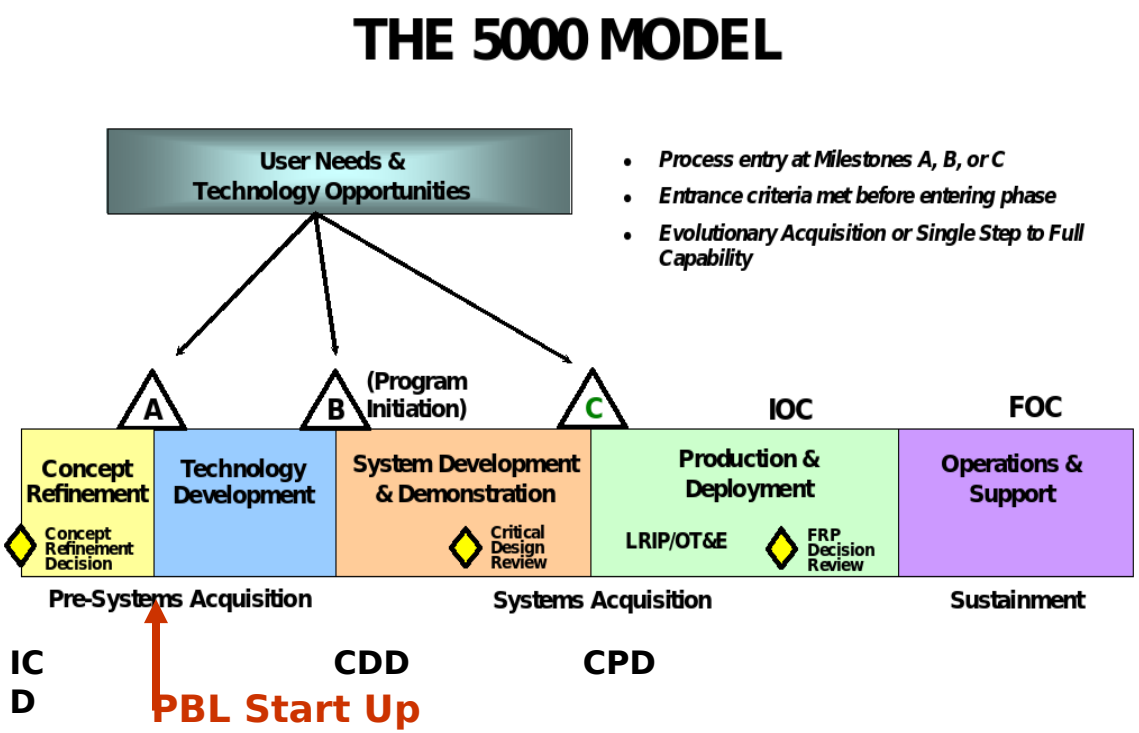
2

Team JSF / Propulsion System Contractors / Government

- **"Nirvana" PBL Contract**
  - 20-Year Contract Length
  - Multiple-year Contract Award Term (5 Yr Base)
  - TO/DO Contract Structure
  - Rolling Pricing Architecture (PIC w/Incentives?)
  - Performance Incentives (Formula vs Award Fee)?

Starting Earlier

Starting PBL Process Earlier- Milestone A



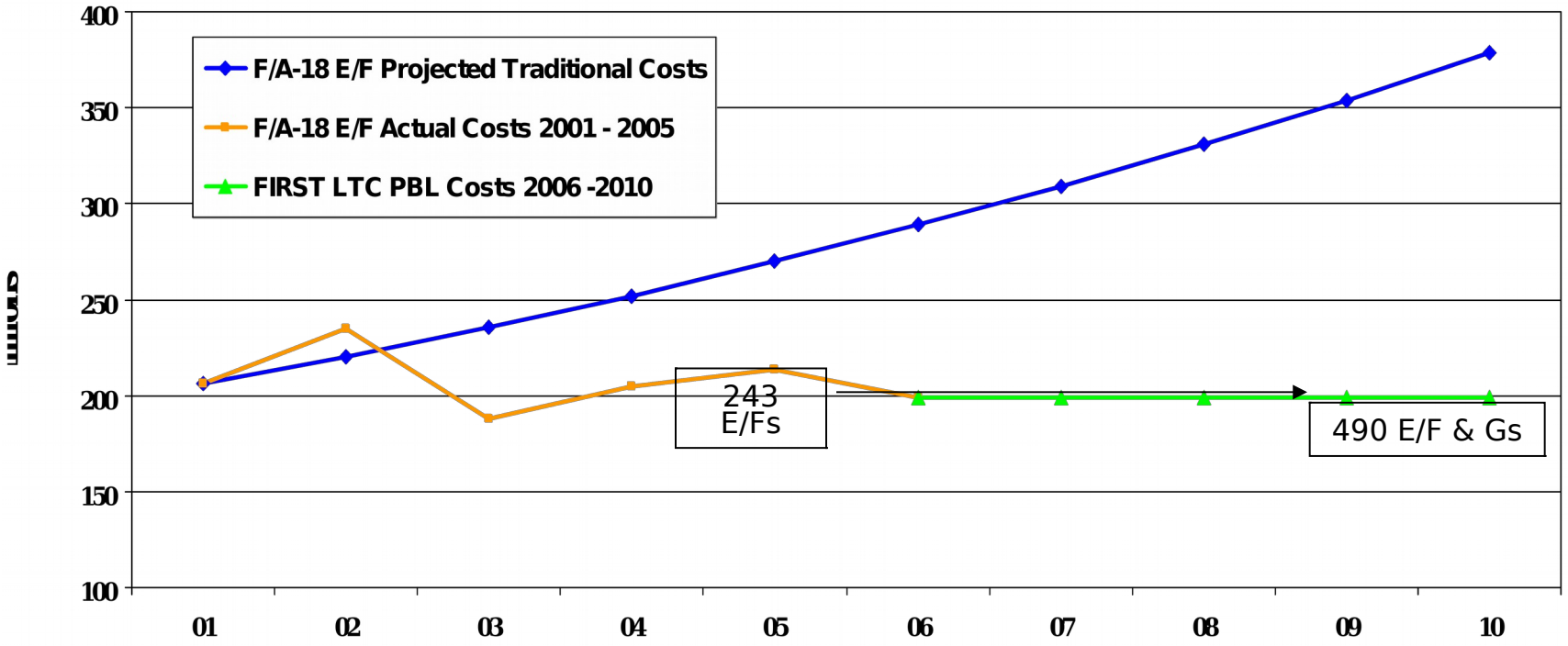
- Use PBL to Incentivize and Drive High Reliability During Technology Development and SDD
- Design For Life Cycle Supportability
- OEMs Held Accountable For System Performance
- Integrate Production and Support into Same Contract

FIRST FY06 to FY10 Contract Overview (System Level)

- Awarded 23 Dec 2005
- $995M Firm Fixed Price Contract with Performance Requirements
- 5 Yr Base Contract with a 5 Yr Option
- Combines Previously Separate Supply and ILS FIRST Contracts, Covering 73% of the Super Hornet
- NAVICP Awarded; NAVAIR to MIPR Funds to NAVICP
- Fleet Driven Incentive Metrics: Increase Readiness at a Reduced Cost
- Expanded J & A with Built-In Flexibility to Supply all F/A-18 T/M/S
- Joint BCAs that supports Contract Award and PM Life Cycle Decision

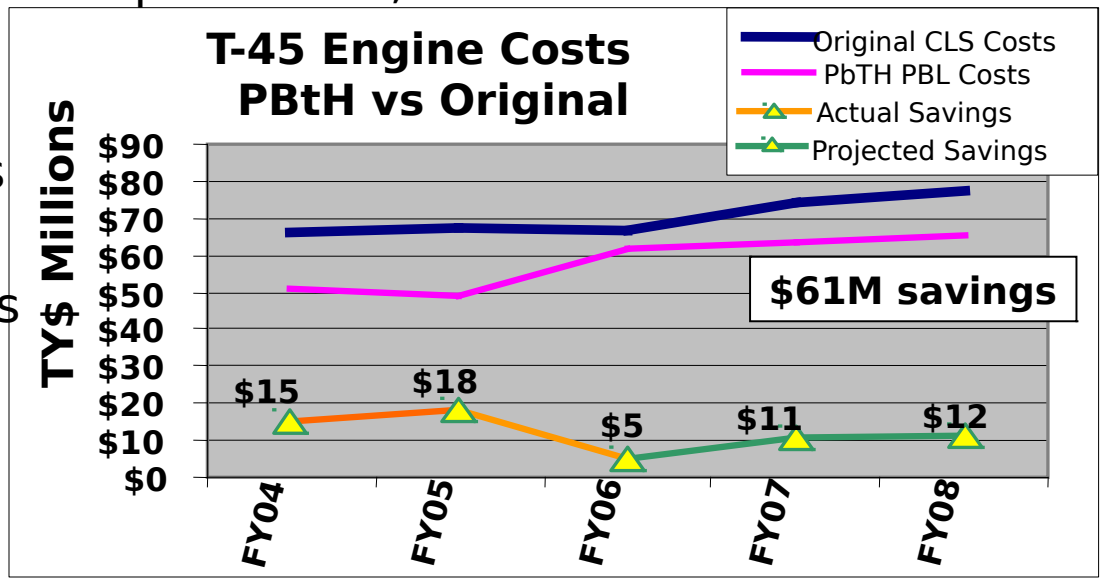
FIRST vs Traditional Sustainment

- Under A Traditional (Non-PBL) Support Scenario, The Cost Of F/A-18 E/F Spares & Repairs Was Projected To Increase At An Annual Rate Of 7% (Based On F/A-18 C/D Historical Spares And Repairs Costs)
- FIRST Stabilizes The Cost Of F/A-18 E/F Spares & Repairs



T-45 F405 PbtH™ Contract

- FAR Part 12 Contract Awarded Oct 03; 1 Year Base Plus 4 One Year Options (FY04 – FY08)
- Performance Standards (i.e., Quality, Quantity, Availability, Timeliness) tied to Performance Requirements; All-Inclusive: Engineering, ILS, RCM
- Original BCA Projected
  $26M O&M Cost Savings
- Updated BCA Projects
  $61M O&M Cost Savings
- Government & Contractor Goals Aligned
  - ✓Increased Time on Wing
  - ✓Increased Reliability



- Engine Availability Contractual Requirements
  - ✓FY04 = 80% of Engine Inventory
  - ✓FY05 – FY08 = 85% of Engine Inventory
- MTBF Contract Metric is 580-640 Hours MTBF; Currently *Over 900 Hours MTBF With Plans to Approach 2000 Hours*; Availability Over 85%

F404 PBL (F/A-18A-D, Sub-System Level)

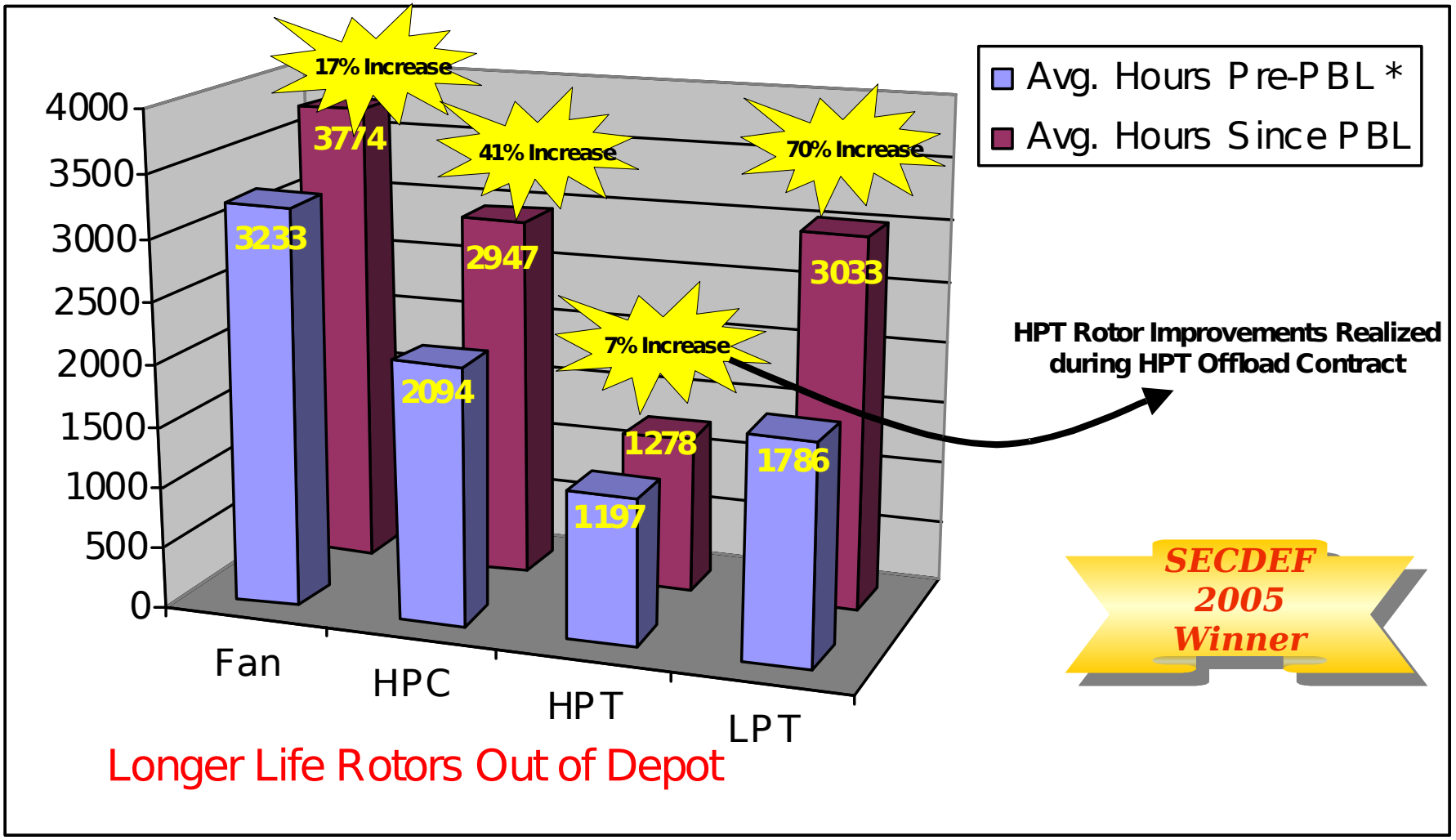
- Four and 1/2 Year Firm-Fixed Price Contract Base Period; Five One Year Additional Ordering Periods
- $510M, Second Largest Aviation Fixed Price PBL Contract…BCA Projects $79M in Cost Avoidances
- Includes 36 F404 Major Sub-Assemblies Covering 1895 Engines
- Covers the Overhaul of the Major Sub-assemblies Regardless of Quantity Repaired/Replaced
- Provides Flying Hour and War Time Surge Flexibility
- Measurable Performance Metrics (LRT, SMA and Durability)
  - ✓ 85% Availability; Disincentives for Lower Than 75%, Incentives Up to 3% for 90% Availability
- Public Private Partnership With NADEP Jacksonville- Leverages OEM "Best Practices" Efficiencies (i.e. Six Sigma, Lean)

Exceeding Expectations!

- ***100% Total Backorder Reduction Contract-to-Date***
- ***Availability 96% (Historical, 43%)***
- ***TAT Reduced by 25%; Backlog Reduced 50%***

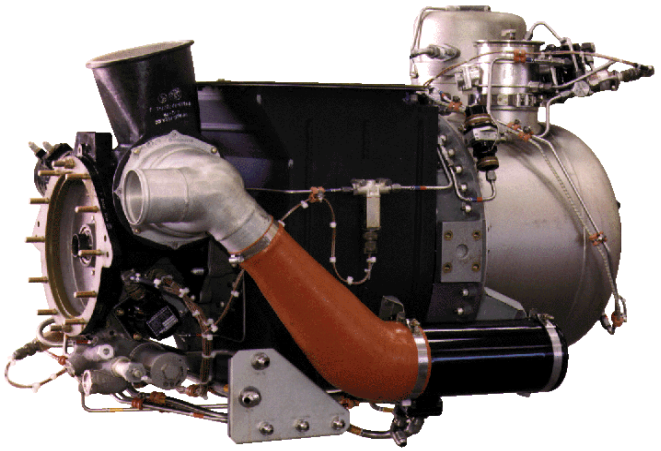
Improving F404 Availability While Reducing $/EFH Cost

F404 PBL TOW Entitlement Improvements Best Builds Using Supermarket Concept



Honeywell Total Logistics Support (Component Level)

- Based on Commercial “Maintenance Service Agreement”
- “Corporate Contract” Awarded June 2000 to Provide Support for APUs Used on the C-2, F/A-18, S-3, and P-3 Aircraft
- Navy’s First Public / Private Partnership
  - ✓ NADEP Cherry Point... Touch Labor
  - ✓ Honeywell... Program Management
- 10 Year Performance Based Contract, Firm Fixed Price (5 Year Base & 5 One-Year Incent Terms)
- Availability, Reliability Increases Guarante
- Delivery Guarantees... 2 Days (IPG 1)
- Priced by the Flight Hour
- TAV- Requisitions/Data Via EDI and Web
- Obsolescence Management
- Product Support Engineering
- Surge Capability... 120% of Annual Flight Hours
- Added C-1 and F404 MF



All Inclusive “No Excuses” Performance

SECDEF 2005 Winner

TLS PBL Results….

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Asset Management	Pre TLS	FY-05	Target
Back Orders	123	0	0
Availability	65%	91%	90%
Logistics Response Time	35 days	4.3 days	5 days
G Condition	232	0	0

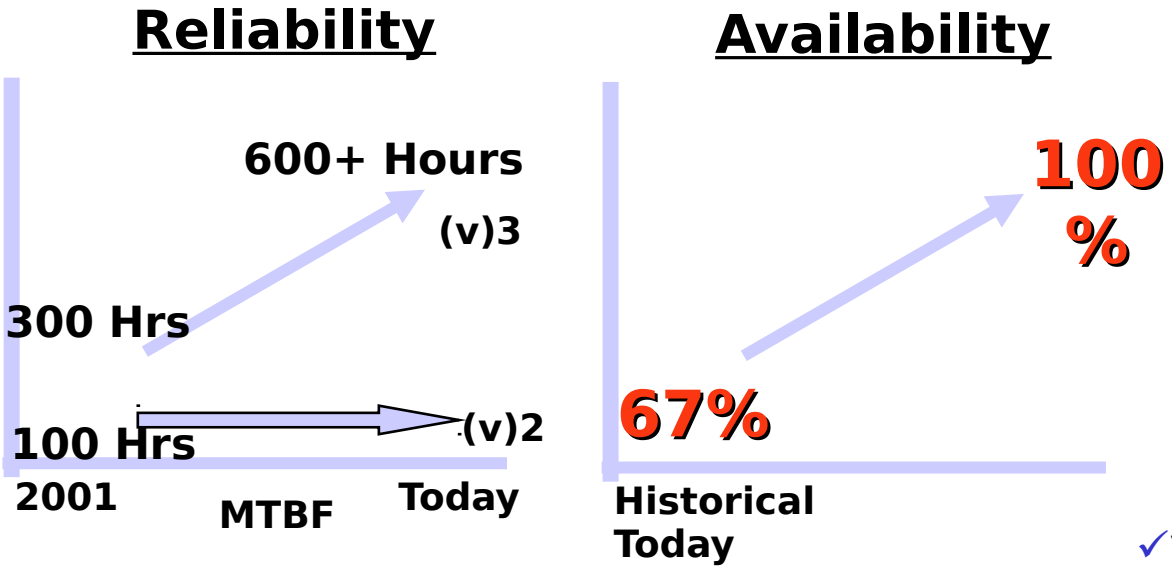
Additional Benefits:

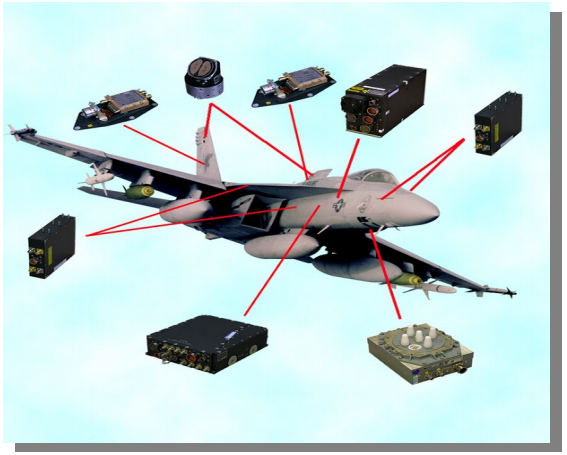
- $50M+ savings/cost avoidances to Navy
- 79 configuration changes implemented to address reliability (18) and correct drawing errors, improve maintainability, or address obsolescence (61)
- 110 APUs ($14M) removed from inventory due to improved asset management
- Depot TAT reduced from 98 to 67 days (25%)
- Commercial Best Practices (Six Sigma, Lean) standardized at NADEPs and Honeywell
- Corporate contract enabled adding KC-130 APU, P-3 engine driven compressor and F/A-18 main engine fuel control and allows Joint Services efforts
- All F404 MFC Backorders eliminated Nov 05; 12 F404-402 conversions completed in 05

….Unsurpassed Service to the Fleet, Relentless Focus on Quality

ALR-67(v)3 PBL Results

ALR-67(v)3 Radar Warning Receiver





Obsolescence Management and Technology Insertion

- ✓**V(3), Included in PBL**
- ✓**V(2), Over $200M in ECPs**
- ✓**V(3), e.g. Analog Encoder Replaced With Digital Encoder *(Lowers Cost, Far More Reliable, Less Prone to Obsolescence, Reduces Heat Signature)***
- ✓***V(3), Ser # Configuration Status Accounting (As Built/As Repaired)***

Bottom Line: Better Product, Better Support, Lower Total Ownership Costs!

H-60 PBLs

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SECDEF 2006 Winner

H-60 FLIR

- Raytheon
- Awarded Sep '03
- $123M Contract W/ 5-yr Base & Five 1-yr Options
- Partnership W/ NADEP Jacksonville
- Covers 3 FLIR Components … Turret, Electronic Unit, Hand Control
- 100% (IPG 1) & 90% (IPG 2-3) Availability
- Reliability Growth (up 40%)
- Obsolescence Mgmt
- Inventory Mgmt … Rqmts Determination

MHSCo Maritime Helicopter Support Company

H-60 Tip-to-Tail

- MHSCO (Lockheed/Sikorsky)
- Awarded Dec '03
- $417M Contract W/5 Yr Base, No Options
- Partnership With NADEPs JAX/CHPT/NORIS,CCAD and Tobyhanna
- Covers 540 Components
- Guaranteed Availability (currently 95%)
- Reliability Sustainment
- Obsolescence Mgmt
- Firm-Fixed Price Per Flying Hour
- Engineering/tech Support
- Inventory and Configuration Mgmt

Questions/Discussion

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Knowledge Management System PBL Community of Practice http://www.navair.navy.mil/kms